

ADDITIONAL MATERIALS TOWARD A MONOGRAPH OF THE GENUS
CALLICARPA. XVII

Harold N. Moldenke

CALLICARPA L.

Additional & emended bibliography: Gamble, Man. Indian Timb., ed. 1, xxvii, 281--283, & 503. 1881; Trimen, Journ. Ceylon Br. Roy. Asiat. Soc. 9: [Syst. Cat. Flow. Pl. Ceylon] 68. 1885; C. K. Schneid., Illustr. Handb. Laubholz. 2: 587 & 591--594, fig. 384 c--i & 385 b--l. 1911; J. C. Willis, Rev. Cat. Indig. Flow. Pl. Ceylon 69. 1911; E. D. Merr., Philip. Journ. Sci. Bot. 12: 103, 298--301, & 382. 1917; W. H. Br., Merr., & Yates, Philip. Journ. Sci. Bot. 12: 240. 1917; T. Itô, Taiwan Shokubutu Dzusetu [Illustr. Formos. Pl.], ed. 1, 603--606 (1927) and ed. 2, 603--606. 1928; Yamamoto, Journ. Soc. Trop. Agr. Formos. 6: 554--555. 1934; Kosterm., Reinwardtia 1: 86 & 106. 1951; T. M. Simpson, Gard. South. Afr. 189. 1964; Garibaldi Accati, Atti Giorn. Stud. Prop. Spec. Legn. Pisa 1964/1965: 145--154. 1966; Anon., Hort. Abstr. 36: 805. 1966; Moldenke, Phytologia 21: 328--348. 1971.

CALLICARPA AMERICANA L.

Additional bibliography: Moldenke, Phytologia 21: 329. 1971.

Additional citations: VIRGINIA: Fort Monroe: Chickering s.n. [Sept. 20, 1879] (W--2605969). TEXAS: Dallas Co.: J. Reverchon s.n. [Dallas, May-June 1876] (W--2607188).

CALLICARPA ANGUSTIFOLIA King & Gamble

Additional bibliography: Moldenke, Phytologia 21: 329 & 330. 1971.

The species has been collected in fruit in November.

Additional citations: MALAYA: Selangor: Nur 34369 (W--2608337).

CALLICARPA ARBOREA Roxb.

Additional & emended bibliography: Wall., Numer. List "49" [=50]. 1829; Gamble, Man. Indian Timb., ed. 1, xxvii, 282, & 503. 1881; Moldenke, Phytologia 21: 330, 336, & 346. 1971.

Jackson (1893) credits a "Callicarpa arborea Wall." to "Wall. Cat. n. 1826, partim" and reduces it to synonymy under C. vestita Wall. Actually, Wallich proposed no such homonym. In the reference cited he plainly accredits C. arborea to Roxburgh, citing 7 specimens for what he regarded as the typical form of the species, and then proposes a variety which he designated "C. vestita". It is certainly the latter taxon to which Jackson refers.

CALLICARPA FORMOSANA Rolfe

Additional & emended bibliography: W. H. Br., Merr., & Yates, Philip. Journ. Sci. Bot. 12: 240. 1917; T. Itô, Taiwan Shokubutu Dzusetu [Illustr. Formos. Pl.], ed. 1, 603 (1927) and ed. 2, 603.

1928; Moldenke, *Phytologia* 21: 332--334 & 346. 1971.

Emended illustrations: T. Itô, Taiwan Shokubutu Dzusetu [Illustr. Formos. Pl.], ed. 1, 603 (1927) and ed. 2, 603. 1928.

Brown, Merrill, & Yates (1917) record this species from Volcano Island in the Philippines.

CALLICARPA LONGIFOLIA Lam.

Additional & emended bibliography: Gamble, Man. Indian Timb., ed. 1, 282 & 503. 1881; T. Itô, Taiwan Shokubutu Dzusetu [Illustr. Formos. Pl.], ed. 1, 604 (1927) and ed. 2, 604. 1928; Moldenke, *Phytologia* 21: 329--331, 333--335, 340, & 344. 1971.

Dop (1932) that his *C. tonkinensis* is closely related to *C. longifolia*, but differs in the shape of its leaf-blades (elliptic or slightly obovate), the whitish tomentum on the lower leaf-surface, the always glabrous corollas, the stamens not as long-exserted, and the drupes being only 1.5 mm. wide.

CALLICARPA LONGIFOLIA f. *FLOCCOSA* Schau.

Additional bibliography: Moldenke, *Phytologia* 21: 155--162 & 344. 1971.

Additional citations: MALAYA: Pahang: Nur 32651 (W--2608361).

CALLICARPA LONGISSIMA (Hemsl.) Merr.

Additional & emended bibliography: T. Itô, Taiwan Shokubutu Dzusetu [Illustr. Formos. Pl.], ed. 1, 604 (1927) and ed. 2, 604. 1928; Moldenke, *Phytologia* 21: 336. 1971.

Emended illustrations: T. Itô, Taiwan Shokubutu Dzusetu [Illustr. Formos. Pl.], ed. 1, 604 (1927) and ed. 2, 604. 1928.

CALLICARPA MACROPHYLLA Vahl

Additional & emended bibliography: Gamble, Man. Indian Timb., ed. 1, 282, 283, & 503. 1881; Moldenke, *Phytologia* 21: 336, 341, & 345. 1971.

CALLICARPA OBLANCEOLATA Urb.

Additional bibliography: Moldenke, *Phytologia* 21: 347--348. 1971.

The G. C. Bucher 1024 and Herb. Roig 7604, distributed as *C. oblanceolata*, are actually *C. areolata* Urb.

In all, 114 herbarium specimens, including the type, and 4 mounted photographs of *C. oblanceolata* have been examined by me.

Additional citations: CUBA: Oriente: Acutia 12691 (Es, W--1881247), 12692 (Es, N, W--1881248), 12693 (Es, Es, N, W--1881249), 12694 (Es, N, W--1881250), 12695 (Es, W--1881251), 12696 (Es, Ml, N, W--1881252), 13323 (Es, N), 13324 (Es, N), 13325 (Es, N), 13328 (Es, N), s.n. [Herb. Roig 8754] (Rg), s.n. [Herb. Roig 8766] (Rg), s.n. [April 16, 1945] (Ml); Alain 3220 (Z); Alain, Clément, & Chrysogone A.1029 (N); Mrs. G. C. Bucher 100 (N), 100a (N), 100aa (N), 100b (N), 100bb (N), 100c (N), 100d (N), 100e (N), 100f (N), 100g (N), 100h (N), 100i (N), 100j

(N), 100k (N), 100 L (N), 100m (N), 100n (N), 100p (N), 100q (N), 100r (N), 100s (N), 100t (N), 100u (N), 100v (N), 100w (N), 100x (N), 100y (N), 100z (N), 110 [Herb. Roig 8154] (N, Rg, Rg, Rg), 11051 (Es, Es), 11459 (Es), s.n. [Moa, 1939] (Ha); Clément 3583 (Ha, N, Vi), 4122 (Ha); Clément & Alain 3919 (Ha, N); Clément, Alain, & Chrysogone 3919 (Vi), 3925 (Vi); Clément & León 5482 (N); Ekman 3837 (N); R. A. Howard 5900 (N, N); León 20103 (N), 20196 (N), 21155 (Ha, N), 21301 (Ha, N); León & Clément 20103 (Ha, Ha), 20196 (Ha, N), 23055 (N), 23128 [July 1949] (N), 23147 (N), 23298 (N), 23300 (N); León, Clément, & Alain 3925 [Clément & Alain 3925] (Ha, N); León, Clément, & Nestor 5402 (Ha), 5502 (Ha), 5593 (Ha); León & Victorin 20691 (Ha, N), 20941b (Ha); León, Victorin, & Clément L.20691 (Es); Marie-Victorin & Clément 21729 (Um--25253), 21731 (Um--25252, Um--25274); Marie-Victorin, Clément, & Alain 21564 (Um--25265); Victorin, Alain, & Clément 21564 (Ha); G. L. Webster 3763 (Mi).

CALLICARPA OBTUSIFOLIA Merr., Philip. Journ. Sci. Bot. 14: 451--452. 1919.

Bibliography: E. D. Merr., Philip. Journ. Sci. Bot. 14: 451--452. 1919; E. D. Merr., Enum. Philip. Pl. 3: 387. 1923; A. W. Hill, Ind. Kew. Suppl. 6: 34. 1926; Moldenke, Alph. List Common Vern. Names 3. 1939; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 62 & 87. 1942; Moldenke, Phytologia 2: 95. 1945; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 141 & 177. 1949; Moldenke, Résumé 183 & 444. 1959; Moldenke, Phytologia 21: 153. 1971.

Merrill's original (1919) description of this species is as follows: "A shrub, the branchlets, petioles, inflorescences, and lower surface of the leaves densely and uniformly cinereous-stellate-pubescent, the indumentum covering the entire surface. Branches terete, pale brownish, glabrous. Leaves elliptic to oblong-elliptic, subcoriaceous, 5 to 8 cm long, 2.5 to 4 cm wide, the apex rounded, obtuse, or sometimes subacute, base usually obtuse, margins entire below, in the upper part distinctly denticulate, the upper surface brownish-olivaceous, glabrous or when young stellate-pubescent along the midrib; lateral nerves 5 to 7 on each side of the midrib, curved, distinct as are the primary reticulations; petioles 5 to 10 mm long. Cymes axillary, peduncled, dichotomous, up to 2.5 cm wide, the peduncles about 1.5 cm long; bracts linear-lanceolate, acuminate, 2 to 2.5 mm long; pedicels 0.5 mm long or less. Flowers rather crowded, pink. Calyx cup-shaped to obconic, about 1.6 mm long, densely stellate-pubescent, the teeth 4, short. Corolla glabrous, 2.5 mm long, the lobes equal, orbicular-ovate, rounded, nearly 1 mm in diameter. Filaments and style 5 to 6 mm long. Fruit globose, dark-brown and rugose when dry, about 2 mm in diameter."

The type was collected by Maximo Ramos [Herb. Philip. Bur. Sci. 32921] at Burgos, in Ilcos Norte Province, Luzon, Philippine Is-

lands, on July 27, 1918, growing in dry thickets at low altitudes, and was deposited in the herbarium of the Philippine Bureau of Science at Manila, now lamentably destroyed. Merrill (1919) records the vernacular name "anayop" and notes that "The alliance of this species is manifestly with Callicarpa blancoi Rolfe, from which it is especially distinguished by its elliptic to oblong-elliptic, usually rounded or obtuse, never acuminate leaves."

The species is known thus far only from the original collection.

CALLICARPA OLIGANTHA Merr., Philip. Journ. Sci. Bot. 13: 155--156. 1918.

Bibliography: E. D. Merr., Philip. Journ. Sci. Bot. 13: 155--156. 1918; Bakh. in Lam & Bakh., Bull. Jard. Bot. Buitenz., ser. 3, 3: 25 & 26. 1921; Chung, Mem. Sci. Soc. China 1 (1): 226. 1924; A. W. Hill, Ind. Kew. Suppl. 6: 34. 1926; P'ei, Mem. Sci. Soc. China 1 (3): [Verbenac. China] 16 & 44--45, pl. 3. 1932; Worsdell, Ind. Lond. Suppl. 1: 160. 1941; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 56 & 87 (1942) and [ed. 2], 131 & 177. 1949; Moldenke, Alph. List Cit. 3: 727. 1949; H.-T. Chang, Act. Phytotax. Sin. 1: 307 & 312. 1951; Moldenke, Résumé 168 & 444. 1959; Moldenke, Phytologia 14: 255 (1967) and 15: 39. 1967.

Illustrations: P'ei, Mem. Sci. Soc. China 1 (3): [Verbenac. China] pl. 3. 1932.

Merrill's original (1918) description of this species is: "Frutex ad 3 m. altus, subglaber, ramulis junioribus parcissime et decidue stellato-pubescentibus; foliis brevissime petiolatis, anguste lanceolatis, usque ad 12 cm. longis et 1.5 cm. latis, chartaceis, utrinque subaequaliter angustatis, acuminatis, basi cuneatis, margine in 3/4 superiore parte distincte serrulatis, supra glabris, subtus glandulosis, glabris, vel junioribus parcissime stellato-pubescentibus, nervis utrinque 7 ad 9, curvato-ascendentibus, tenuibus; cymis axillaribus depauperatis, 2- vel 3-floris, brevissime pedunculatis, pedicellis glabris, circiter 4 mm. longis; fructibus globosis, 3 ad 3.5 mm. diametro, glabris, calycis persistentibus, glabris, truncatis. A slender shrub, 2 to 3 m. high, in age glabrous or nearly so, the young branchlets sparingly stellate-pubescent. Branches slender, terete, smooth, glabrous, grayish. Leaves narrowly lanceolate, chartaceous, 6 to 12 cm. long, 0.8 to 1.5 cm. wide, narrowed at both ends, the upper surface glabrous, smooth, eglandular, brownish-olivaceous, shining, the lower surface slightly paler, distinctly pitted-glandular, glabrous, or when young sparingly stellate-pubescent near the midrib, the base cuneate, the apex rather slenderly but bluntly acuminate, the margins on the upper two-thirds distinctly serrulate; lateral nerves 7 to 9 on each side of the midrib, slender, curved-ascending, anastomosing, the reticulations slender, not prominent; petioles 2 mm. long or less. Cymes axillary, few, sessile or shortly peduncled, depauperate, 2- or 3-flowered, the peduncles 2 mm. long or less, the pedicels not exceeding 4 mm. in length, glabrous. Fruit globose or subglobose, dark-brown when dry, 3 to 3.5 mm. in diameter, glabrous, the per-

sistent calyx truncate, glabrous."

The type of the species was collected by Elmer Drew Merrill (no. 11060) in thickets along small streams, at an altitude of about 900 meters, Loh Fau Mountain (Lofaushan), Kwangtung, China, on August 23, 1917, and was deposited in the herbarium of the Philippine Bureau of Science at Manila, now destroyed. The collector notes that the species is "rare, but a single plant seen. The alliance of this species is manifestly with the form commonly known as Callicarpa purpurea Juss., but which should be known as C. dichotoma (Lour.) Raesch. It differs in its relatively much narrower leaves, and depauperate, sessile, very few-flowered cymes."

Immature green fruit was collected in August. Bakuizen van den Brink (1921) reduces the species to synonymy under what he calls C. japonica var. dichotoma (Lour.) Bakh. Chang (1951) cites only the original collection and compares it with both C. dichotoma (Lour.) K. Koch and with C. brevipes (Benth.) Hance.

The Tsang 21346, distributed as C. oligantha, is actually C. japonica var. angustata Rehd.

In all, 2 herbarium specimens, including the type, and 2 mounted photographs of C. oligantha have been examined by me.

Citations: CHINA: Kwangtung: E. D. Merrill 11060 (N—isotype, N—photo of type, Ph—type, Z—photo of type).

CALLICARPA OSHIMENSIS Hayata, Journ. Coll. Sci. Univ. Tokyo 30 (1): 221. 1911.

Synonymy: Callicarpa oshimensis var. oshimensis Hatus., Bull. Arts & Sci. Div. Ryuky Univ. (Math. & Nat. Sci.) 3: 107. 1959. Callicarpa oshimensis Hayata ex Moldenke, Résumé Suppl. 16: 18, in syn. 1968.

Bibliography: Hayata, Journ. Coll. Sci. Univ. Tokyo 30 (1): [Mater. Fl. Formos.] 221. 1911; J. Matsum., Ind. Pl. Jap. 2 (2): 529. 1912; Prain, Ind. Kew. Suppl. 5, pr. 1, 43. 1921; Sakaguchi, Gen. Ind. Fl. Okin. 18. 1924; S. Sasaki, Cat. Govt. Herb. Formosa 433. 1930; Mak. & Nemoto, Fl. Jap., ed. 2, 995. 1931; Nemoto, Fl. Jap. Suppl. 622. 1936; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 57 & 87. 1942; Hara, Enum. Sperm. Jap. 1: 185. 1948; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 133 & 177. 1949; Naito, Sci. Rep. Kag. 2: 60. 1953; Moldenke, Phytologia 5: 28. 1954; Masamune, Sci. Rep. Kanazawa Univ. 4: [Enum. Tracheophyt. Ryuky 7:] 46 & 47. 1955; Hatus., Bull. Arts & Sci. Div. Ryuky Univ. (Math. & Nat. Sci.) 3: 107. 1959; Moldenke, Résumé 172, 181, & 444. 1959; Prain, Ind. Kew. Suppl. 5, pr. 2, 43. 1960; Hatus., Mem. South. Indust. Sci. Inst. Kagoshima Univ. 3 (1): 31. 1962; Moldenke, Résumé Suppl. 3: 20 (1962), 5: 6 (1962), and 14: 4. 1966; Moldenke, Phytologia 14: 248—249. 1967; Moldenke, Résumé Suppl. 16: 11, 17, & 18 (1968) and 17: 8. 1968; Moldenke, Phytologia 21: 46, 240, & 242. 1971.

Previous to receiving good material of this taxon and of the so-called C. iriomotensis Masam. and C. okinawensis Nakai from my

esteemed friend and colleague, Dr. E. H. Walker, I had tentatively regarded them as 3 distinct and valid species. Now, however, I feel that Hatusima (1959) is amply justified in reducing them to a single species with two varieties. He says "Above three forms of C. oshimensis which are distinguished as the following analytical key are not different in their essential characters, such as size of cymes, flowers and fruits, and the indumentum of branchlets and leaves, though size of leaves and cymes as well as the serration of leaves are considerably variable. Therefore, it seems advisable to reduce the above two forms from Okinawa and Yaeyama to the varietal rank, as the distinguishing characters mentioned above are very variable as in the other species of Callicarpa." He distinguishes the 3 taxa as follows:

1. Leaf-blades regularly rhombic-ovate, 2--7 cm. long, acuminate at the apex, sharply and regularly coarse-serrate along the margins, cuneate at the base; cymes 1--3 cm. long.....
C. oshimensis.
- 1a. Leaf-blades rarely rhombic-ovate, often with shorter acumens and smaller, denser, and irregular serration.
2. Leaf-blades ovate to ovate-lanceolate, 2--4.5 cm. long, with smaller and denser serration; cymes usually less than 1 cm. long.....C. oshimensis var. okinawensis.
- 2a. Leaf-blades ovate to ovate-oblong or rarely obovate-oblong, 3--10 cm. long, with larger and coarser serration; cymes usually more than 1 cm. long.....
C. oshimensis var. iriomotensis.

Masamune (1955) records the vernacular name "osimamurasaki" for C. oshimensis and gives its distribution as "Amami-osima (leg. Igoma) et (leg. Tasiro in G. Herb. Formos. n. 27877); Okinawa: Kunigami; Iheyazima; Iriomote?. Distr. Endemic." Hatusima (1959) gives the distribution of the typical form as only Amami-oshima and Tokunoshima Islands in the Ryukyu Archipelago.

Wilson found the plant fruiting in February. Material has been misidentified and distributed in herbaria as C. shikokiana Mak. On the other hand, the Gressitt 532 & 563, Itô s.n. [23. V. 1936], and Kawagoe s.n. [July 27, 1919], distributed as typical C. oshimensis, are actually var. iriomotensis (Masam.) Hatus.

In all, 3 herbarium specimens and 2 mounted photographs of the type collection of C. oshimensis have been examined by me.

Citations: JAPAN: Kyushu: E. H. Wilson 6050 (W--777757, W--777758). AMAMI ISLANDS: Amamioshima: Kawagoe s.n. [July 17, 1919] (W--2071334); Uchiyama s.n. [December 8, 1900] (W--photo of type, W--photo of isotype).

CALLICARPA OSHIMENSIS var. IRIOMOTENSIS (Masam.) Hatus., Bull. Arts & Sci. Div. Ryukyu Univ. (Math. & Nat. Sci.) 3: 107. 1959.

Synonymy: Callicarpa iriomotensis Masam., Trans. Nat. Hist. Soc. Formos. 25: 254. 1935. Callicarpa oshimensis var. iriomo-

tensis Hatus. ex Moldenke, Résumé Suppl. 16: 18, in syn. 1968. Callicarpa ohshimensis var. iriomotensis (Masam.) Hatus. ex Moldenke, Résumé Suppl. 16: 18, in syn. 1968. Callicarpa ohshimensis var. iriomotensis (Masam.) Masam. ex Moldenke, Résumé Suppl. 16: 18, in syn. 1968.

Bibliography: Masam., Trans. Nat. Hist. Soc. Formos. 25: 254. 1935; A. W. Hill, Ind. Kew. Suppl. 9: 45. 1938; Sonohara, Tawada, & Amano, ed. E. H. Walker, Fl. Okin. 131. 1952; Masam., Sci. Rep. Kanazawa Univ. 4 [Enum. Tracheophyt. Ryukyu 7]: 46. 1955; Hatus., Bull. Arts & Sci. Div. Ryukyu Univ. (Math. & Nat. Sci.) 3: 107. 1959; Moldenke, Résumé 181 & 444. 1959; Moldenke, Phytologia 14: 248--249. 1967; Moldenke, Résumé Suppl. 16: 11, 12, 17, & 18. 1968; Moldenke, Phytologia 21: 242. 1971.

For a statement on how this variety differs from the typical form of the species, see under C. oshimensis in this series of notes. Recent collectors describe the plant as a bush or shrub, 1.8--6 m. tall, the stems 1.5--2 cm. in diameter, the branches spreading horizontally, and the (immature) fruit green or pale-green and moderately small. The corollas are described as "pink" on Hatusima 18600.

The variety has been collected in the shade of large trees, in forests, at the edges of fringing forests, and in wet gulch bottoms in dense low scrubby forests, at altitudes of 12--200 m., flowering in May and June, and fruiting in June, August, and November. Fosberg says that it is "occasional in undergrowth on broad or high densely wooded ridges", while Hatusima refers to it as a "common shrub" on Iriomote. Masamune (1955) says that it is endemic to Isjigaki, Iriomote, and Yonaguni in the Sakashima group of the Ryukyu Island Archipelago and records the vernacular name "Iriomote-murasaki-sikibu". Hatusima (1959) lists it only from Iriomote and Ishigaki.

Material of this taxon has been misidentified and distributed in herbaria under the names C. japonica Thunb., C. okinawensis Nakai, and C. oshimensis Hayata. On the other hand, the Hatusima 18577 & 24357, distributed as var. iriomotensis, are actually var. okinawensis (Nakai) Hatus.

In all, 18 herbarium specimens of var. iriomotensis have been examined by me.

Citations: RYUKYU ISLAND ARCHIPELAGO: Iriomote: Gressitt 532 (N, S), 563 (N); Hatusima 18600 (W--2243550); Kawagoe s.n. [July 27, 1919] (W--2071333, Z); Koidzumi s.n. [1--20.VII.1923] (W--2070985); Masamune & Suzuki s.n. [June 28, 1935] (Tw); Tedodake s.n. [Herb. Univ. Imp. Taihok. 3307] (Tw); Walker & Tawada 6654 (N, W--2093919). Ishigaki: F. R. Fosberg 37191 (Z), 38008 (Rf), 38054 (Ac); Hatusima 22899 (Ar), 23006 (Ar); Masamune & Suzuki s.n. [June 30, 1935] (Tw). Uchibanare: Itô s.n. [23.V.1936] (Tk).

CALLICARPA OSHIMENSIS var. OKINAWENSIS (Nakai) Hatus., Bull. Arts & Sci. Div. Ryukyu Univ. (Math. & Nat. Sci.) 3: 107. 1959.

Synonymy: Callicarpa okinawensis Nakai, Bot. Mag. Tokyo 36: 22. 1922. Callicarpa mollis Matsum. ex Nakai, Bot. Mag. Tokyo 36: 22, in syn. 1922 [not C. mollis Koord., 1966, nor Req., 1839, nor Shirasawa, 1949, nor Sieb. & Zucc., 1844, nor Willd., 1840]. Callicarpa mollis (non Sieb. & Zucc.) Matsum., Sci. Rep. Kanazawa Univ. 4 [Enum. Tracheophyt. Ryukyu 7]: 46, in syn. 1955. Callicarpa okinawaensis Nakai apud Masam., Sci. Rep. Kanazawa Univ. 4 [Enum. Tracheophyt. Ryukyu 7]: 46. 1955. Callicarpa ohshimensis var. okinawensis (Nakai) Hatus. ex Moldenke, Résumé Suppl. 16: 18, in syn. 1968.

Bibliography: J. Matsum., Bot. Mag. Tokyo 13: 114. 1899; Kuroiwa, Bot. Mag. Tokyo 14: 126. 1900; J. Matsum., Ind. Fl. Jap. 2 (2): 529. 1912; E. H. Wils., Journ. Arnold Arb. 1: 183. 1920; Nakai, Bot. Mag. Tokyo 36: 22--23. 1922; Sakaguchi, Gen. Ind. Fl. Okin. 18. 1924; A. W. Hill, Ind. Kew. Suppl. 7: 37. 1929; Mak. & Nemoto, Fl. Jap., ed. 2, 995. 1931; Nemoto, Fl. Jap. Suppl. 622. 1936; Moldenke, Prelim. Alph. List Invalid Names 12. 1940; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 61 & 87. 1942; Moldenke, Alph. List Invalid Names 10. 1942; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 140 & 177. 1949; Sonohara, Tawada, & Amano, ed. E. H. Walker, Fl. Okin. 131. 1952; Naito, Sci. Rep. Kag. 2: 60. 1953; Masam., Sci. Rep. Kanazawa Univ. 4 [Enum. Tracheophyt. Ryukyu 7]: 46--47. 1955; Hatus., Bull. Arts & Sci. Div. Ryukyu Univ. (Math. & Nat. Sci.) 3: 107. 1959; Moldenke, Résumé 181, 245, & 444. 1959; Moldenke, Résumé Suppl. 4: 8 & 11 (1962) and 5: 6. 1962; Moldenke, Phytologia 13: 431 & 433 (1966) and 14: 142. 1966; Moldenke, Résumé Suppl. 16: 11, 12, & 18 (1968) and 17: 8. 1968; Moldenke, Phytologia 21: 240 & 242. 1971.

The characters by which this variety is distinguished from C. oshimensis Hayata and C. oshimensis var. iriomotensis (Masam.) Hatus. are enumerated in my discussion of C. oshimensis in this present series of notes. Nakai (1928), Masamune (1955), and Hatusima (1959) all agree that the variety is endemic to Okinawa. Masamune records the vernacular name "kogomemurasaki" and cites Masamune & Simabukuro s.n. [Yonawadake, Aug. 6, 1934]. He says that the "C. mollis Sieb. & Zucc." of Matsumura (1899), Kuroiwa (1900), E. H. Wilson (1920), Matsumura (1912), and Sakaguchi (1924), insofar as they refer to Ryukyu Islands specimens, is actually C. oshimensis var. okinawensis. The C. mollis accredited to Koorders and referred to in the synonymy above, is actually a synonym of C. caudata Maxim., that credited to Shirasawa is C. shirasawana Mak., and that of Requier and of Willdenow is C. acuminata H.B.K., while that of Siebold & Zuccarini is a valid species.

Recent collectors describe this plant as a shrub, 2 m. tall, growing in the shade of trees, along forest paths, in small clearings, and at the edges of low spinnies, at 100--200 m. altitude, flowering in May, and fruiting in July. On Yonakuni Island

it is said by Hatusima to be "frequent in mountain thickets", but on Iriomote he reports it as "a rare shrub". The corollas are described as "pink" on Hatusima 18041.

Material of this variety has been misidentified and distributed in herbaria under the names C. oshimensis Hayata, C. oshimensis var. iriomotensis (Masam.) Hatus., and C. ohshimensis var. iriomotensis (Masam.) Hatus. On the other hand, the Koidzumi s. n. [1-20.VII.1923], distributed as var. okinawensis, is actually a mixture with var. iriomotensis.

In all, 16 herbarium specimens and 1 mounted photograph of var. okinawensis have been examined by me.

Citations: RYUKYU ISLAND ARCHIPELAGO: Iriomote: Hatusima 18577 (Tk, W--2243547); Koidzumi s. n. [1-20.VII.1923] (Xi, Z). Okinawa: Hatusima 18041 (W--2243407); Koidzumi s. n. [27.V--3.VI.1923] (W--2070986), s. n. [1-20.VII.1923] (W--2070985, Z); Masamune & Simabukuro 1770 (Tw); J. Matsumura s. n. (Tk); Sonohara, Tawada, & Amano 6332 (N, N, W--2093654); Tashiro 2 (W--photo); E. H. Walker 8254 (Z); Yamazaki s. n. [Jan. 9, 1964] (Tk). Yonakuni: Hatusima 24357 (Ar).

CALLICARPA PACHYCLADA Quisumb. & Merr., Philip. Journ. Sci. Bot. 37: 195--196. 1928.

Synonymy: Callicarpa pachyclada Merr. & Quisumb. ex Moldenke, Résumé Suppl. 3: 30, in syn. 1962.

Bibliography: Quisumb. & Merr., Philip. Journ. Sci. Bot. 37: 195--196. 1928; A. W. Hill, Ind. Kew. Suppl. 8: 37. 1933; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 62 & 87 (1942) and [ed. 2], 141 & 177. 1949; Moldenke, Phytologia 5: 28 & 29. 1954; Moldenke, Résumé 183, 194, & 444. 1959; Moldenke, Résumé Suppl. 3: 30. 1962; Moldenke, Phytologia 21: 229. 1971.

The original description of this species (1928) reads as follows in the English version: "A shrub about 3 m high; the thickened branchlets and the lower surface of the leaves densely fulvo-tomentose with rather soft plumose and stellate hairs; branches terete or somewhat compressed at the nodes, pale grayish. Leaves chartaceous to subcoriaceous, broadly oblong-elliptic, 27 to 39 cm long, 14 to 21 cm wide, undulate-dentate, apex acutely acuminate, base acute, the upper surface olivaceous, glabrous, smooth, shining, the lower surface pale, somewhat yellowish, not at all glandular, very densely stellate-plumose-pubescent; lateral nerves about 10 on each side of the midrib, very prominent, the reticulations distinct; petioles densely tomentose, somewhat angled, 4 to 6 cm long. Cymes axillary, many-flowered, dichotomous, very densely tomentose, pedunculate, 6 to 8 cm long, 5 to 10 cm wide. Flowers crowded, their pedicels 0.5 to 1 mm long; calyx membranaceous, cup-shaped, shortly 4-lobed, tomentose, about 1.75 mm long; corolla 4-lobed, 3 to 3.5 mm long, 2.5 to 3 mm in diameter, the lobes 1.25 to 1.5 mm long, about 1 mm wide, oblong-ovate, obtuse. Stamens 4, exserted, the filaments 4 to 4.5 mm long; anthers ob-

long, 1.25 to 1.4 mm long. Fruit globose, glabrous, 2 to 2.5 mm in diameter, surrounded at the base by the densely fulvo-tomentose calyx; bracts densely fulvo-tomentose, linear, up to 15 mm long, the bracteoles much shorter."

The type of the species was collected by Maximo Ramos and Gregorio E. Edaño [Herb. Philip. Bur. Sci. 45640] on forested slopes at an altitude of about 1600 meters on Mount Alzapan, in Nueva Vizcaya Province, Luzon, Philippine Islands, on May 24, 1925, and was deposited in the herbarium of the Philippine Bureau of Science but is now destroyed.

Quisumbing & Merrill comment that this is "A species most closely allied to Callicarpa magnifolia Merrill, but with broadly oblong-elliptic, somewhat larger leaves, the margins undulate-dentate and the base acute."

Recent collectors describe the plant as 3 m. tall, the stems 10 cm. in diameter, the (immature) fruit green, flowering and fruiting in May, growing in mossy forests at an altitude of 1600 meters. The corollas on the type collection are described as "violet", but those on Kjellberg 1763 are said to have been white.

Material of this species has been misidentified and distributed in herbaria under the names C. pentandra var. cumingiana f. pentamera (H. J. Lam) Bakh., C. pentandra f. pubescens Bakh., and C. pentandra var. typica f. hexandra Bakh.

In all, 9 herbarium specimens, including the type collection, and 2 mounted photographs of C. pachyclada have been examined by me.

Citations: PHILIPPINE ISLANDS: Luzon: Ramos & Edaño s.n. [Herb. Philip. Bur. Sci. 45640] (B--isotype, Bz--18104--isotype, Ca--329895--isotype, N--isotype, N--photo of isotype, Z--photo of isotype). GREATER SUNDA ISLANDS: Celebes: Barhi 76 [Boschproefst. bb.24101] (Bz--18568); Kjellberg 1763 (Bz--18233, Z); Rachmat 640 (Bz--18564, Bz--18565).

CALLICARPA PARVIFOLIA Hook. & Arn., Bot. Beech. Voy. 305. 1838.

Synonymy: Callicarpa nishimurae Koidz., Bot. Mag. Tokyo 32: 136--137. 1918.

Bibliography: Hook. & Arn., Bot. Beech. Voy. 305. 1838; Walp., Repert. Bot. Syst. 4: 129. 1845; Schau. in A. DC., Prodr. 11: 646. 1847; W. B. Hemsl. in Godman & Salvin, Biol. Cent.-Am. Bot. 2: 538. 1882; Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 1, 1: 386. 1893; Briq. in Engl. & Prantl, Nat. Pflanzenfam., ed. 1, 4 (3a): 166. 1895; Koidz., Bot. Mag. Tokyo 32: 136--137. 1918; P. C. Standl., Contrib. U. S. Nat. Herb. 23: 1253. 1924; A. W. Hill, Ind. Kew. Suppl. 6: 34. 1926; Hosokawa, Journ. Soc. Trop. Agr. Taiwan 6: 205. 1934; Moldenke in Fedde, Repert. Spec. Nov. 39: 300 (1936) and 40: 46--48, 120, & 121. 1936; Moldenke, Geogr. Distrib. Avicenn. 13. 1939; Moldenke, Geogr. Distrib. Verbenac., [ed. 1], 16, 61, & 87. 1942; Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 2, 1: 386. 1946; Moldenke, Alph. List Cit. 1: 36. 1946; Hara, Enum. Sperm. Jap. 1: 185. 1948; H. N. & A. L. Moldenke, Pl. Life

2: 74. 1948; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 28, 140, & 177. 1949; H.-T. Chang, Act. Phytotax. Sin. 1: 294. 1951; Moldenke, Résumé 34, 182, & 444. 1959; Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 3, 1: 386. 1960; Moldenke, Phytologia 21: 152. 1971.

Hooker & Arnott's original (1838) description of this species is "foliis coriaceis obovatis obtusissimis breve petiolatis laeviter crenatis supra adultis glabris subtus dense cano-tomentosis reticulatim venosis, pedunculis petiolum aequantibus, floribus capitato-cymosis. Leaves an inch and a half long; the younger ones inclining to rust-colour beneath. The peduncles and petioles are densely stellato-tomentose, like the under side of the foliage."

Standley (1924) keys out the species of Callicarpa known to him from Mexico as follows:

1. Leaf-blades obovate, very obtuse at the apex....C. parvifolia.
- 1a. Leaf-blades lanceolate to ovate, acute or acuminate at the apex.
 2. Leaves persistently but minutely stellate-pubescent on the upper surface.....C. acuminata.
 - 2a. Leaves glabrous on the upper surface except when very young.
 3. Leaves densely stellate-tomentose beneath....C. pringlei.
 - 3a. Leaves sparsely stellate-tomentose beneath.....
C. subpubescens.

It should be noted, however, that C. subpubescens Hook. & Arn. has since Standley's work been proved not to grow at all in Mexico, but to be endemic to the Bonin Islands instead. Now it appears that C. parvifolia does not occur in Mexico either. Dr. S. Hatusima, in a letter to me dated January 18, 1971, states "I am now studying the real status of Callicarpa parvifolia Hook. & Arn. described as from Mexico and [am] inclined to believe from the original description of this species and the following answer from Dr. R. M. Harley of the Royal Botanic Garden, Kew, to whom I sent a leaf of C. nishimurae Koidz. from the Bonins for comparison with the type of C. parvifolia Hook. et Arn. that C. parvifolia Hook. et Arn. is not from Mexico but from the Bonins. 'I have now examined the leaf of Callicarpa nishimurae Koidz. with those of the type of C. parvifolia Hook. et Arn. The similarity between the two is very striking, and the texture of the indumentum on the leaf undersurface appears identical, when viewed under a dissecting microscope. There thus seems little doubt that, as you suggest, the type was collected in the Bonins, and not in Mexico. In our indetermined cover, we had a sterile specimen of C. parvifolia collected in the 1930s from the Bonins, and this also agreed closely with the type....'"

The original description of C. nishimurae by Koidzumi (1918) is as follows: "Ad C. paucinervia Merrill remote affinis, foliis crassioribus coriaceis ellipticis utrinque rotundatis supra pilis diutius persistentibus subtus indumento luteo-brunneo; calycis dentibus longis acutisque differt. Arbuscula? ramis vetustiori-

bus atro-brunneis vel nigrescentibus, ramulis hornotinis inflorescentiis foliis subtusque indumento sordido vel lutescente densissime stellato-pubescentibus. Folia late elliptica crasse coriacea supra in siccitate nigra albo-stellato-pilosa et glandulosa utrinque rotundata, margine crenato-denticulata versus basin integra, costis secundariis utrinque 4--5 supra planis subtus leviter elevatis, lamina 2--5 cm. longa, 1,3--3,0 cm. lata; petiolis carnosis ad 8 mm. longis tomentosus. Cyma axillaris parva tomentosa, floribus brevissime pedicellatis. Calyx glaber acute 4-denticulatus glandulosus circ. 1,8 mm. altus. Nom. Jap. Urajiro-komurasaki. Distr. Bonini insl. Chichishima (leg. S. Nishimura! no. 72, Aug. 15, 1917. This species is named in compliment to Mr. S. Nishimura who collected the plant."

Hara (1948) cites as an illustration of this species a "f. 2488 (1938)", but unfortunately gives the name of the publication and its author only in Japanese characters.

It appears, thus, that all previous writers, including myself, have been in error in ascribing C. parvifolia to Mexico. The original inscription to this effect on the type sheet at Kew was apparently an error in transcription, as it was in the case of C. subpubescens. Since Standley did his work on the trees and shrubs of Mexico, then, Mexico has "lost" two species of beautyberry, but it has also gained one he did not know about -- C. americana L., which occurs in Coahuila.

In all, 3 herbarium specimens, including the type, and 2 mounted photographs of C. parvifolia have been examined by me.

Additional & emended citations: BONIN ISLANDS: Chichijima: Beechey s.n. ["Tepic"] (K--type, K--isotype, Mi--photo of type, N--isotype, Z--photo of type).

CALLICARPA PAUCIFLORA Chun ex H.-T. Chang, Act. Phytotax. Sin. 1: 275. 1951.

Synonymy: Callicarpa pauciflora "Chun ex Chang" apud Chang, Act. Phytotax. Sin. 1: 309. 1951.

Bibliography: H.-T. Chang, Act. Phytotax. Sin. 1: [269], 274, 275, 309, & 311. 1951; G. Taylor, Ind. Kew. Suppl. 13: 21. 1966; Moldenke, Résumé Suppl. 14: 3. 1966.

The original description of this species by Chang (1951) is as follows: "Frutex circ. 60 cm altus. Ramuli teretes plus minusve lenticellati, hornotini stellato-pubescentes, annotini glabri pallidi. Folia ovato-elliptica vel elliptica 6--10 cm longa, 2.5--4 cm lata, apice acuminata vel breviter acuminata, basi late acuta, quadrante inferiore et apice excepto crenato-serrata, supra viridia sparse stellato-puberula, subtus pallidiora stellato-pubescentia, nervis utrinsecus 7--9, supra conspicuis subtus elevatis; petioli 4--6 mm longi, stellato-pubescentes. Cymae parvae, pauciflorae (floribus circ. 3--7), bis dichotomae, 1 cm latae, stellato-pubescentes, pedunculis 4--6 mm longis, pedicellis 1--1.5 mm longis; bracteae lineari-lanceolatae 8 mm longae, 1 mm latae; bracteolae subulatae 1.5 mm longae; calyx ad medium lobatus 2.2 mm longus stellato-pubescentis, lobis acutis lanceolatis

circ. 1 mm longis; corolla rosea 3.5 mm longa parcissime puberula, lobis ovatis; stamina exserta, filamentis 4--5 mm longis, antheris 1 mm longis longitudinaliter dehiscentibus; ovarium sparse pubescens, stylo circ. 6 mm longo. Fructus ignotus."

The type and apparently only known collection of this taxon is S. P. Ko 52908, collected in 1903 in Canton, Kwangtung, China, and deposited in the herbarium of the Botanical Institute of Sunyatsen University in Canton. Chang (1951) compares it with C. longipes Dunn.

CALLICARPA PEDUNCULATA R. Br., Prodr. Fl. Nov. Holl. 1: 513. 1810.

Synonymy: Callicarpa cuspidata Roxb., Hort. Beng. [83], hyponym. 1814; Wall. in Roxb., Fl. Ind., ed. 1 [Carey & Wall.], 1: 409. 1820 [not C. cuspidata Bakh., 1932, nor Hassk., 1921, nor Lam & Bakh., 1951]. Callicarpus dentata Roth ex Roem. & Schult. in L., Syst. Veg., ed. 15 nova, 3: 98. 1818. Callicarpa dentata Roth, Nov. Pl. Sp. 81--82. 1821 [not C. dentata Pav., 1936, nor Roxb., 1831, nor Sessé & Moc., 1940]. Callicarpa lanata Zipp. ex Span., Linnaea 15: 330. 1841 [not C. lanata Gamble, 1893, nor Hosséus, 1912, nor L., 1771, nor H. J. Lam, 1940, nor Lam., 1821]. Callicarpus cuspidata Roxb. ex Hassk., Cat. Pl. Hort. Bot. Bogor. Cult. Alt. 136. 1844. Callicarpus oblongifolia & acuminatissima Hassk., Cat. Pl. Bot. Bogor. Cult. Alt. 136. 1844. Callicarpa lanata Vahl ex Schau. in A. DC., Prodr. 11: 644. 1847. Callicarpa oblongifolia var. acuminatissima Hassk. apud Miq., Fl. Ind. Bat. [Fl. Ned. Ind.] 2: 887, in syn. 1856. Callicarpa cana Wall. (in part) apud Bocq., Adansonia 3: 192. 1863 [not C. cana Dalz. & Gibs., 1919, nor Gamble, 1889, nor L., 1771, nor Spreng., 1866, nor Vahl, 1866]. Callicarpa lanata Schau. apud Benth. & F. Muell., Fl. Austral. 5: 57, in syn. 1870. Callicarpa tiliaefolia Tiejism. & Binn. ex C. B. Clarke in Hook. f., Fl. Brit. Ind. 4: 569, in syn. 1885. Callicarpa pedunculata var. typica H. J. Lam, Verbenac. Mal. Arch. 56--57. 1919. Callicarpa lanata Walp. apud Bakh. in Lam & Bakh., Bull. Jard. Bot. Buitenz., sér. 3, 3: 24, in syn. 1921. Callicarpa pedunculata R. Br. ex Bakh. in Lam & Bakh., Bull. Jard. Bot. Buitenz., sér. 3, 3: 24, sphalm. 1921. Callicarpa pedunculata Roth ex Schwenke, Zytol. Untersuch. Verbenac. 27 & 28. 1931. Callicarpus cuspidata Hassk. ex Moldenke, Prelim. Alph. List Invalid Names 13, in syn. 1940. Callicarpus oblongifolia var. acuminatissima Hassk. ex Moldenke, Prelim. Alph. List Invalid Names 14, in syn. 1940.

Bibliography: Rumph., Herb. Amb. 4: 124, pl. 59. 1743; Vahl, Symb. Bot. 3: 13. 1794; R. Br., Prodr. Fl. Nov. Holl. 1: 513. 1810; Poir. in Lam., Encycl. Méth. Suppl. 2: 34. 1811; Roxb., Hort. Beng. [83]. 1814; Roem. & Schult. in L., Syst. Veg., ed. 15 nova, 3: 98. 1818; Wall. in Roxb., Fl. Ind., ed. 1 [Carey & Wall.], 1: 394, 409, & 481. 1820; Roth, Nov. Pl. Sp. 81--83. 1821; Steud., Nom. Bot., ed. 1, 137. 1821; Spreng. in L., Syst. Veg., ed. 16, 1: 420. 1825;

Blume, Bijdr. Fl. Nederl. Ind. 14: 818. 1826; J. A. & J. H. Schultes., Mant. 3: 52—55. 1827; Spreng. in L., Syst. Veg., ed. 16, 5: 126. 1828; Wall., Numer. List "49" [=50]. 1828; Roxb., Fl. Ind., ed. 2 [Carey], 1: 394 & 395. 1832; D. Dietr., Syn. Pl. 1: 428—429. 1839; Steud., Nom. Bot., ed. 2, 257. 1840; Span., Linnaea 15: 330. 1841; Hassk., Cat. Pl. Hort. Bot. Bogor. Cult. Alt. 136. 1844; Walp., Repert. Bot. Syst. 4: 128. 1845; Schau. in A. DC., Prodr. 11: 644. 1847; Hassk., Pl. Jav. Rar. 491. 1848; Jacques & Hérincq, Man. Gén. Pl. Arb. & Arbust. [Fl. Jard. Eur.] 3: 503. 1851; Benth. in Hook., Journ. Bot. & Kew Gard. Misc. 5: 135. 1853; Miq., Fl. Ind. Bat. [Fl. Ned. Ind.] 2: 886—887. 1856; Miq., Fl. Ind. Bat. [Fl. Ned. Ind.] Suppl. 1: 243. 1860; Regel, Gartenfl. 9: 56. 1860; Sieb. & de Vriese, Ann. Hort. Bot. Pays-Bas [Fl. Jard.] 4: 97. 1861; Rosenthal, Syn. Pl. Diaphor. 430. 1862; Regel, Gartenfl. 12: 101. 1863; Bocq., Adansonia 3: 192. 1863; E. Pritz., Icon. Bot. Ind. 2: 55. 1866; F. Muell. in Landsb., Explor. Austr. 119. 1866; Benth. & F. Muell., Fl. Austral. 5: 57. 1870; Roxb., Fl. Ind., ed. 3 [C. B. Clarke], 132. 1875; F. Vill., Nov. App. 158. 1880; F. Muell., First Census 103. 1882; F. M. Bailey, Syn. Queensl. Fl. 377. 1883; F. M. Bailey, Proc. Roy. Soc. Queensl. 1: 70. 1884; C. B. Clarke in Hook. f., Fl. Brit. Ind. 4: 569. 1885; W. B. Hemsl. in Thomson & Murray, Rep. Scient. Res. Voy. Challenger 3, Bot. 1: 110. 1885; Forbes, Wander. Naturf. Mal. Arch. 2: 226. 1886; F. Muell., Second Census 173. 1889; K. Schum. & Hollr., Fl. Kaiser Wilk.-land 119. 1889; F. M. Bailey, Cat. Pl. Queensl. 35. 1890; N. E. Br. in Johnson, Gard. Dict. 157. 1890; Warb. in Engl., Bot. Jahrb. 13: 426. 1891; Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 1, 1: 386. 1893; Moore & Betche, Handb. Fl. N. S. Wales 356. 1893; K. Schum. & Lauterb., Fl. Deutsch. Schutzgeb. Südsee 522. 1900; Britten in Banks & Soland., Illustr. Austral. Pl. [Bot. Cook's Voy. 2:] 74, pl. 237. 1901; F. M. Bailey, Queensl. Fl. 4: 1174. 1901; W. P. Wright in Cassell, Dict. Pract. Gard., ed. 1, 1: 156. 1902; F. M. Bailey in Meston, Exp. Bell.-Ker (Parliam. Rep.) 14. 1904; Rehd. in L. H. Bailey & Mill., Cycl. Am. Hort. 1: 217. 1906; W. P. Wright in Cassell, Dict. Pract. Gard., ed. 2, 1: 156. 1907; King & Gamble, Journ. Roy. Asiat. Soc. Bengal 74 (2), extra no., 803 & 807—808. 1908; King & Gamble, Mat. Fl. Malay. Penins. 21: 1013 & 1017—1018. 1909; Koord., Exkursionsfl. Java 3: 134. 1912; F. M. Bailey, Compreh. Cat. Queensl. Pl. 382. 1913; Rehd. in L. H. Bailey, Stand. Cycl. Hort. 2: 629. 1914; H. J. Lam in H. Hallier, Meded. Rijks Herb. Leid. 37: 33—34. 1914; E. D. Merr., Interpret. Rumph. Herb. Amboin. 448—449, 526, & 559. 1917; H. J. Lam, Verbenac. Malay. Arch. 46, 54—58, & 65. 1919; Bakh. in Lam & Bakh., Bull. Jard. Bot. Buitenz., sér. 3, 3: 11 & 23—27. 1921; H. N. Ridl., Fl. Malay Penins. 2: 617. 1923; E. D. Merr., Enum. Philip. Flow. Pl. 3: 388. 1923; H. J. Lam in Engl., Bot. Jahrb. 59: 88. 1924; Heyne, Nutt. Plant. Nederl. Ind., ed. 1, 1311. 1927; Domin, Bibl. Bot. 22 [89 (6)]: 1108. 1928; Stapf, Ind. Lond. 1: 525 & 526. 1929; Schwenke, Zytol. Untersuch. Verbenac. 27 & 28. 1931; Metc., Lign. Sci. Journ. 11: 405—408. 1932; P. Dop, Bull. Soc. Hist. Nat. Toulouse 64: 505 & 506. 1932.

[to be continued]